Academy of PHYSICAL MEDICINE

Upper Limb and Bicep Problems - Ref 126DR

with Dan Rossouw

19th November 2020

TRANSCRIPT

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Steven Bruce
Today we're going to be talking about the upper extremity, the biceps and shoulder in particular. And I'm joined by orthopedic consultant, Dan Russo from total orthopedics in London. Dan, great to have you with us. How are you?

Dan Rossouw
Yeah. Hi. Thank you. Very good. Thank you. It's great in London. It's a bit rainy today.

Steven Bruce
And we can tell from your accent that you're a South African. So, do you wanna give us a bit of background on yourself?

Dan Rossouw
Yes, I will I qualified basic medicine in South Africa. But I've done my postgraduate training in the UK, random London and then Northwest rotations going out to reading and working with well got inspired by people like Steve Copeland, who are great pioneers in shoulder surgery. So, I now work at the Royal Free in London as a as an orthopedic couple of consultants.

Steven Bruce
And orthopedic upper limb I mean, you specialize particularly in just that area, where do you cover other areas as well?

Dan Rossouw
No we tend to sub specialize mostly, most hospitals, certainly in the UK developed sub specialty teams. So, I'm part of a three men upper limb team and that's what we do really. I guess it gets you better outcomes when you know what you're doing.

Steven Bruce
Well, one would like to think so yeah, yeah, with a total orthopedics fit into the role free.

Dan Rossouw
So, turtle to Beatrix is not really part of the world free. We have formed a similar group of orthopedic surgeons and turtle orthopedics was designed to be a private service delivery group of surgeons that total because we cover all parts of the body. So that's not just upper limb total orthopedics is amongst the 11 of us who belong to cover all parts of the body, spines, hips, knees, feet, ankles, them, and we hopefully offer a pretty comprehensive service.

Steven Bruce
And what's it like at the moment in terms of I don't know the backlog of patients as a result of the first lockdown and your ability to treat with the current constraints?

Dan Rossouw
Oh, yeah, it's been, it's been pretty challenging, because with the first lockdown, we stopped doing all elective operating. So, there's been a massive buildup of people waiting for treatment. And secondly, it's been difficult when you have to operate because it takes such a long time in the emergency situation, you know, wearing full PPE. And getting people into beds and getting them nursed, has been a challenge. It's been a real challenge.

Steven Bruce
Because I mean, you get people out of hospital quicker in order to minimize the problems in hospital.

Dan Rossouw
Yeah, we try to but yeah, we've been doing that as a, as a sort of status quo from quite a few years now. We've been reducing length of stay as part of a quality improvement for many years. So, we try not to keep people in hospital anyway.

Steven Bruce
So, if we move on then to your special area of interest. I feel a bit like I'm hosting mastermind here. But that was a challenge of questions I could put to you know, there's always a bit of a challenge, you know, for osteopath, chiropractors, physios I mean, I've done about orthopedic consultants, because it's such a complicated joint, it seems to me and so prone to injury.

Dan Rossouw
Well, I, the reason I went into shoulder surgery is because it's quite a mysterious joint. And it's, it is very, very difficult. It provides challenges and you it's like solving puzzles all the time. For me, you know, seeing somebody with an arthritic hip was pretty straightforward. Yeah, there were clear guidelines. What do you do with this case, that's it, boom, boom, boom, and you do it. With shoulders, it's not so easy, because they all present in pretty much the same way and could have completely different conditions causing that their symptoms. And the other part of it is true as well, that, you know, two people as we were discussing earlier, might have the same diagnosis and be treated completely differently, depending on the interaction between your experience and what the patient's requirements are.

Steven Bruce
The trouble is, as well, I think everything I've read about special tests for the shoulder seems to indicate that they all tell you that there's basically something wrong with the shoulder and it's very hard to pin down exactly what it is.

Dan Rossouw
And the patients have told you that when you've come in with my shoulder. And it's true that you have to take, you can't rely on one diagnostic tool like a hip X ray, you have to take the whole lot into consideration. You've got to listen to what the patient is telling you about the nature of the pain that they're having, or the dysfunction they're having or the weakness. That's interesting in shoulders, you can only have weakness,

stiffness or instability. with pain, those are the four symptoms. And the combination of those four symptoms gives you the vast array of conditions that you that you go through. But if you boil it down, there's very little that goes wrong. It's either unstable stiff, unstuffed Is Wobbly or it's weak. And the combination of these things will tell you what's wrong with your patient if you listen carefully, and then you have to interpret your physical findings with the tests and come to some form of conclusion about what's going on. But that's only the beginning of it. Because then you've got a fair idea about what's causing this symptom. The next big challenge is what do you do about it? Yeah, and you know, the standard treatment has always been go from noninvasive to invasive from minimally disruptive to massive invasion, depending on where you're your requirement lies from your patients and how severe it is.

Steven Bruce
Well, one of the things that complicates things is when someone like yourself says there are actually five muscles in the rotator cuff, which was what came through in in our email discussions before then, perhaps you want to talk to us about the renewed anatomy of the shoulder?

Dan Rossouw
Well, its people learning about shoulder muscles all day still. And you wonder we've been studying it for so long, haven't we got a right yet. And as you say, we're not calling it the fifth muscle. And in fact, I'll tell you about another one, that's probably a sixth one. But you know, the biceps tendon is what was referred to in this in this course, as being the fifth rotator cuff muscle. And because of its function, when it contracts on the actual humeral head, it acts as a compressor depressor muscle, and we'll help centralize the joint. And it's very interesting, if you see somebody who has a massive rotator cuff tear, the effect on the biceps tendon is that that tendon hypertrophy is dramatically from being a five-millimeter diameter attendant to a 25-millimeter diameter, it can sometimes look very like a supraspinatus tendon. And your body is an interesting and very functionally self-regulating organ. And particularly muscles like bones, if you stress them, they hypertrophy they get bigger. And you can often think that this biceps tendon is trying to replace the function of an absence supraspinatus for instance, right, though it functions like a head depressor

Steven Bruce
How effective is it doing that?

Dan Rossouw
And what not brilliant, but every little bit helps in the shoulder You know, when you're on an edge that doesn't take much to change a functioning to a dysfunctional shoulder, and all go the other way from someone who's pseudo paralytic, and can lift their arm with a bit of training, a bit of rehab. Correct bit of physiotherapy combined with pain relief, and suddenly, the little bit of extra that you get from the strength of that muscle helps the shoulder suddenly become functional again. So, it doesn't take very much to tip the balance of a, you know, dysfunctional painful shoulder into one that's working. And that is why, you know, people will sorry to carry on. But that's why it's this, this thing about trying to get a bit of rehabilitation going early. And even in the face of what seems to be a disaster situation on an MRI scan, you can often get people just returning to fairly normal function with much reduced pain without doing anything. We will talk

about that a bit later, when we were talking about treatments, I was just about to say, the long head of biceps particularly seems to be quite either involved or causative, or whatever in shoulder problems is that is that big because it penetrates the capsule? Yes, it's in an unfortunate position because it sits in an area which is also occupied by the subacromial Bursa, which is also occupied by the weakest points in the rotator cuff. So, the only thing that doesn't usually start up at that point is arthritis. But all the other pathologies we have start up in the same region. So, it's a pretty bad area for generating shoulder pain. And it's also pretty bad at being specifically diagnosed because generally if you ultrasound the general population, that area where the biceps pain is, and your shoulder will have a bit of bursitis a bit of tendinosis possibly a partial thickness, Pastor tear or and differentiating which of those is actually causing the problem may be partly responsible to why there's such a frequent diagnosis of biceps tendinitis. It's a very common diagnosis. Most people say you know, put a bit of biceps tendinitis. Why? Well, it's tender when you press it and it hurts in the place of the biceps and you rub it and it hurts and you move the biceps and it exacerbates the pain. But that could be true for most of the other conditions that we were mentioning as well. But it is a vulnerable tendon because it is a by our throat or tendon. It crosses two joints, which means There's a lot of wobbliness in the system, if you want to call it that's not a scientific word, but you know what I mean. And the tendon also moves around a sort of 90 degree bend a lot of the time, in a fairly narrow little groove. So, you have the effect of a, I was considered sort of the rope climb as rope over the edge of the cliff, there's got to be a bit of scuffing and rubbing going on there. And it's also a reasonably a vascular area. So, the tendon is subject to fraying to damage. And it's also got all the other things that are going around it there. So, the bias the bursitis, and, and the and the rotator cuff. insertions are all converging on that point where the biceps leaves the joint

Steven Bruce
How common do you think it is, for the biceps tendon to become displaced from its groove?

Dan Rossouw
So, in degenerate tears, that certainly is and the thing that holds it in place in normal anatomy is also a fairly mysterious structure. In the in the rotator interval, it called the biceps pulley. And it's, it's, it's called the biceps pulley. And people consider that just to be a little bit of tissue across the bicipital groove to contain it, but it's actually a much larger and more complex structure than that. It involves the cortical humeral ligament, which goes from the coracoid to that region and forms part of the roof of the biceps groove. And it involves the this the subscapularis insertion, and some of the cross fibers of that the transverse ligament at that area forms part of the biceps pulley. So, it's a fairly complicated area to try to keep the biceps tendon in place. And that tells you that it must want to pop out every now and then. And some people have congenitally narrow grooves, so there's more pressure on those soft tissue structures. And they often fail, and particularly the top end of sub scab, if that fails, that's usually a pretty strong indicator that the biceps is going to start subluxation out. And it starts from the top downwards. So, it'll start just at the top end of the of the groove. And as the sub SCAP fails, and the biceps pulley structures fail, it becomes more and more and it's a sort of postage stamp effect. Once it goes, it goes. And it could be very painful, because that's a very painful sort of thing to happen.

Steven Bruce
When it when it is this when it does become displaced. by certain techniques, you can we can put it back in the groove, will it then recover fairly readily? Or does it need further surgical assistance to keep it that?

Dan Rossouw
Yeah, it won't stay on its own. And because the forces that are going to be coming out will still be there. And there is just as around that area, there is this interesting condition I heard about and I've seen only one subsequently, it's a rare condition, but it's called biceps entrapment. Where if you fully abduct and flex forward, so you go into an adductor overhead flexed position, you're internally rotating the humeral head on the glenoid, which means you're taking that biceps pulley area right onto the glenoid. And then moving it backwards. The biceps tendon can in some people's sub locks into the joint and getting trapped and locked between like a like a locked bucket handle tear of a meniscus can get itself in trapped in the joint. And that that was an interesting thing to know about. And it apparently presents with posterior shoulder pain. So, it's one of the records as opposed to your shoulder pain in this condition. And there's a test for it. It's like an O'Brian test, but going further high in the air and internally, we're taking a bit further and there's a clunk in it and your shoulder gets stuck mount that just sort of also to remind me to think about what happens to the biceps tendon when the arm goes into all these peculiar positions. We always think about the biceps with the arm in the anatomical position, and the biceps is running downhill. Sometimes it's running uphill. So, you've got to think about what you're doing with a bicep. So, when your arm is elevated, or internally rotated, its position relative to the sub scab with the rotator cuff muscles to the labor and to all of those things changes completely. So, there's a lot of stress on that area. And you know, we were saying will it continue to subblocks yet probably will.

Steven Bruce
Right? So, what is what's the technique that what is the problem that you see most of in clinic?

Dan Rossouw
Well, to try and my biggest problem is trying to work out whether this is a bicep problem, or you know, the diagnostic conundrum that we're in which What is it and it's difficult because your special rating logical examinations don't often help you, because they come up with Yeah, there's all three of those, and we don't know which ones causing the pain. So, you have to try and work out what's the pain generator. And the communist clinical condition I see that is this this fraying and degeneration of the biceps tendon in the sort of middle-aged elderly population who are maintaining fitness by going to the gym and doing things and playing tennis, and it becomes painful. And there is a there's a school of thought, and the French are very happy to cut the biceps tendon because they don't believe it as much in the way of functional into a need, and necessity. But when people come along with this pain, you say to them, Look, I'm going to cut your tendon and that'll take your pain away. It sounds counterintuitive. But this is a process that happens naturally, when people spontaneously rupture their biceps tendonitis, therefore, that happens because of a degenerating, painful tendon preexisting. And finally, the last little strand goes and there's a catastrophic episode. But it settles and become the pain that was there before usually goes away.

Steven Bruce
And I presume that I mean, that catastrophic episode is what leads to the Popeye sign, which is talking about, although I personally never seen it, we got a picture of it here.

Dan Rossouw
Yeah, let's have a look. So, it has to do with the anatomy of,

Steven Bruce
I don't know if you can bring the slide number for Justin.

Dan Rossouw
And I'll just talk over the, the long headsets anterior to the short head. And as it ruptures at the top and the elasticity of muscle pulls the muscle belly down. And from being a fusiform shape previously, it becomes a ball like a cricket ball. And it's the size usually of a cricket ball, maybe a table tennis ball. And it can be quite disconcerting, there can be a lot of bruising. And I guess I spend more time reassuring people when I see this happen, that it's not dangerous, not going to kill them. It's not something that's an emergency. And quite often, if the patient, as you could see was probably a fairly low demand patient, you try and convince them not to have anything done at all, which is really difficult sometimes, because expectations are if you've torn something really bad, you want to get it fixed. And actually fellowship.

Steven Bruce
But as you're saying in France, they would cause this problem, they would call it a Popeye sign by cutting it anyway,

Dan Rossouw
a lot of the time if you are just coping somebody for shoulder pain, and because of the difficulty in diagnosis, you might be thinking that it's primarily an impingement or a bursitis tendinosis that you want to do a decompression for. And you scope them and you find that there's a very degenerate biceps tendon. And in that instance, I often when I'm not certain I would consent somebody for biceps tenotomy, you just cut the tender near nearer to root on the glenoid and allow it to drop down and patient sometimes if you haven't told them about it, they're quite unhappy because they suddenly got this big ball in their arm. But it takes the pain away and functionally they are pretty good enough for the non-manual worker. Just normal Joe Soper works in an office isn't it a slightly out you know, a lot of gray hair like myself. They you can you can function perfectly normally.

Steven Bruce
Yeah, does it? How much does it affect range of motion of the arm?

Dan Rossouw
So, range of motion, not at all because you're not affecting any of the joints but the power in flexion usually drops by about 20%. And but it recovers because you're up at the shorthaired and brachialis. Both

hypertrophy in response to it but a physiotherapy a bit of bit of help from a training guided, osteopathy going along just to get things moving and keep it there, getting rid of the swelling, getting rid of the pain to three weeks down the line. If you measure their strength, again, it's probably only 10% done. And within three months, you get back to normal equal strength.

Steven Bruce
Now I got a few questions from the audience if I can take those right. Jonathan says is there any reliable way you can specifically diagnose the bicep 10 biceps tendon as the problem and not other areas of the shoulder? For example, the other muscles of the rotator cuff?

Dan Rossouw
I can't I've tried I'm never 100% certain that this is definitely bicep. So clinically, you can palpate the bicipital groove, you can try and do force resistant flexion you can strengthen the muscle do the speeds test do the other tests which we traditionally do. But it's it's very difficult. And as I said earlier, if you were to rely on your Special Investigations such as ultrasound, which is probably one of the better ones for this Unless the ultrasound says there's no bursitis, there's no tendinosis. But there's definitely inflammation around the biceps tendon, then then then you pretty good on the diagnosis. But in my experience, every ultra-sonographer comes along and says, now hang on a bit, there's a bit of bursitis, there's a bit of tendinosis. And there's a bit of biceps tendonitis. Sure, I'm not certain if it's desperately important to make that distinction, because I think our first line of treatment is going to be, you know, rest, gentle mobilization, a bit of friction, a bit of ultrasound, a bit of mobilization, getting it all going and seeing what happens for all three of those conditions. So, I think you're brave if you can be certain that it's biceps tendinitis, and not one of the others. Of course, the, the bicep sheath communicates with a with a joint, so it's all one space. So, if there's any problem within the joint or a bit of an effusion, it'll go down the sheath. And so there might even be a primary problem in the joint itself. Yeah.

Steven Bruce
Moving on, Vlad has asked always said that he's seen more supraspinatus tendinopathy is diagnoses on case histories. And he cares to remember, yes, during his time working for the NHS, and he's actually he's asking whether it really is that common? Or is it just the casual scapegoat diagnosis?

Dan Rossouw
So, I think it's again, that the problem of you making a diagnosis, what the ultrasound tells you it is, um, and certainly, if you send, and I agree with him, you know, I can't ever I think I've probably seen to this year of people that I've sent for an ultrasound of their shoulder in a query cuff tear query tendon problem that come back without tendinitis and bursitis. They always come together. So, it's almost a pre stamped report that goes on the ultrasound report that says this is a tendinosis by a bursitis. to notice of supraspinatus.

Steven Bruce
In particular, supraspinatus

Dan Rossouw
Yeah, it's usually the supraspinatus the end, when you arthroscope, these people, the tendon itself usually looks reasonably good. So, I'm not sure where what the appearance is on the ultrasound that makes them do this. And when I look at the ultrasounds, the pictures themselves, they are the tendon is a little thicker than you expect it to be. But I'm not sure if that sort of counts as just an appearance with the situs on top of it or not. Right?

Steven Bruce
You've intrigued Bill, Bill says, What's the sixth muscle of the rotator cuff?

Dan Rossouw
Okay, so, subs cap minor is just for cut a long story short, because then I think that the, the lower, one quarter to one third of subs cap is embryologically a different muscle. And although it's part of the subscapularis complex, when you operate on these muscles, you will you see that the upper two thirds of the subscapularis as a muscle belly, which then turns into a very nice aponeurotic fibrous tendon and then joins on to the bone. And the bit right underneath. It seems to be muscular all the way right on to the bone. And somebody had a look at this now and they reckon that it's embryologically slightly different from the rest of subscribe because God has different that portion. They've got a slightly different nerve supply and also looks different. So yeah, so there's the sixth rotator cuff muscles subscale. I wonder.

Steven Bruce
I wonder if that actually makes any difference to our approach to rehab and things like that or even your approach to surgery does.

Dan Rossouw
it No not at all. It's just it's unlike the terrorists where you know there's a terrorize major and minor, they've got very different functions. The subs got that little bit does the same job as the rest of it. And it doesn't it's nerve supplies is from subscapular nerve. So, it's all absolutely the same. Yeah, we just incorporated in there when you if you operate and you're doing an approach to the shoulder you divided as you would do the rest of the muscle. But who knows, you know, maybe somebody will come up with something new one day about sub SCAP minor.

Steven Bruce
You mentioned a low demand patient earlier on and Eli wants to know how you define a new oil he wants to know how you define a low demand patient.

Dan Rossouw
Okay, I guess it depends what you are yourself because everything is relative to everybody and an elderly patient is getting older and older for me now. But I guess low demand is somebody who will perform mostly what we would call activities of daily living. So, getting dressed, eating, drinking, shopping, driving, without exerting or having a physical occupation which would involve lifting heavy weights. Petitive

maneuvers, manual labor, force or sport, which puts you as your arm at a higher demand than it would normally do for your activities of daily living. So, I guess maybe low demand might equal sedentary and might equal non-sporty might equal non-manual labor.

Steven Bruce
Right? Okay. Suddenly a bit more specific for you. Phil says he has a patient who had an ultrasound diagnosis of an inflamed supraspinatus tendon in February this year. The patient, of course, then disappeared into the ether because of lockdown and has reappeared this month. Apparently, he's a gardener who does lots of hedges and the condition is much worse now. Would steroids be a good idea for him?

Dan Rossouw
Yeah. In short, good.

Steven Bruce
Anything, I think, somewhere in the slides I was given some time ago for this presentation, you had something about sort of the limited applicability of steroids was that?

Dan Rossouw
Yeah. So, this is an interesting one. And I think this has been driven by insurance companies, rather than anybody else, because they they've put a limit on the number of steroid injections, one is remunerated for by an insurance company. But there is also some evidence that repetitive steroid weakens the myofibroblasts and myofibrils of a musculotendinous structure. And they did some work on this in Oxford, when they were doing the, the seesaw trial, they took biopsies of tendons and linked to they were able to link the number of steroid injections to apoptotic changes. apoptosis is a great word I learned recently. But so, I had to use it. Yeah, but so there is a thought that there is a very, there are too many steroids. And there is a concept of too much steroids. But what the number is, is difficult to quantify. So, what I tend to try and say as just as a guide, I would say three injections a year is probably enough, then I wouldn't worry too much about the effect on the tendons. And you can repeat that year on year. So, in 10 years, you could have 30 injections, I don't think that would harm your tendons or your muscles at all. Right? It is, after all, a pretty natural substance we're injecting it's just in your higher concentrated form.

Steven Bruce
And Amanda's asked us about the Popeye sign or ask you about the Popeyes, and she says she's recently seen a patient with that sign and explained it as it's not painful. And if you can find it, the patient can function there may be no intervention needed. But Amanda did suggest that they speak to a GP to see if they want to do further investigations or referral. Is it totally unnecessary to investigate?

Dan Rossouw
Yes, absolutely. I think you're wasting your time doing more investigation. That's one of the signs which is very specific and very sensitive. So, pop by sign, the times when people worry about it, and when I've been asked to do something about it is for people who do modeling or worried about what they look like on the

beach. At Not at the moment, because we can't get there and it's the middle of winter. But you know, the physical appearance, and

Steven Bruce
this is the United Kingdom, we don't go

Dan Rossouw
by now I know. For me, Christmas Day is a bride on the on the beach, you know, and that's just not on here. Um, however, um, so it is a real thing. People do have body image problems with the Popeye sometimes, and that it would be an indication to do something. And you I've had two or three people who've said, Look, I know it's not hurting me. It just I just don't like the way it looks. There is sometimes also a very sort of moderately to mild ache Enos that happens in the muscle belly because it continues to be innovated and it wants to contract every time because the nerve fibers in the nerve impulses are being sent down by the brain to move when you bend your elbow. So, they can be able to drag in us in a bit of discomfort in it in the longer term. You've got to weigh that against an operation which is going to take a tendon that's so rotten that it's already ruptured itself and try and get it to strengthen up and rejoin somewhere. So, your chances of success are poor to start with. And it's surgery which you don't really want to have if you don't need to.

Steven Bruce
I guess right now, that would be very much classed as elective surgery since it doesn't impair function dramatically.

Dan Rossouw
Um, well, no, not really. I mean, if it's an injury and a sudden onset, and for instance, if somebody had a bad sort of body dysmorphic reaction to that thing, we would we would I would offer them a repair with biceps. I mean, this is fairly important thing if you both have the distal end the proximal, we'll talk about the distal biceps for later. But certainly, proximal if you leave it too long, you won't get it back. The ability of the biceps tendon to scar down, hunker down and stay where it is, is dramatic. And after two weeks, you know, 14 days after the injury, you're on a loser to try to actually reattach that muscle or mobilize it sufficiently efficiently put it back somewhere sensible. So, there is with biceps, tendons, both proximal and distal, there is a window of opportunity that if you are going to do something you need to get on and do it smartly.

Steven Bruce
Right? You said we're going to talk about the distal biceps, but we've got so many questions coming in, we might not move on to that I'm

Dan Rossouw
Not gonna we'll let's stick with proximal for the time being.

Steven Bruce
And Angelica says, how can you help stabilize the subluxed biceps tendon? And is that important for rehab?

Dan Rossouw
I don't think you can do it without surgery is my honest opinion, because once it's out the forces that have pulled it out, have beaten and destroy that biceps pulley we were speaking about earlier. And without that restraint in place, it's every time you flex your arm and internally rotate, it's going to come out. So, I think you're on iliza if you're trying to stabilize it via non-surgical means, in and out, please tell me if there's a method that that anybody knows about. But it doesn't seem logically possible to me for that to happen.

Steven Bruce
Without stabilization, surgical stabilization involves nailing the existing structures back into place, or would it mean graft?

Dan Rossouw
It To be honest, I would probably do biceps tenotomy and Tina DS, because that is a reliable way of dealing with it. And what you were describing trying to recreate the biceps pulley, it's a very specialized structure, once you start operating, and all you get is scar tissue. So, I would sacrifice the function of the long head of biceps in the joint, cut the cut the bicep tendon and just do a straightforward Tina desus outside. Right now, Tina desus is an interesting thing I could talk about because there are many ways of doing that surgically. Traditionally, you try reattach the tendon to the groove the base of the groove by drilling a hole and putting a variety of screws in. A newer way, which I've started doing recently is to actually take that tendon and put it onto the conjoint tendon from the coracoid. So, you're just moving it a little bit medially and you're recreating what the given apes have got an origin of the short and the long head from the same place. And that's a soft tissue procedure which is less painful and recovers quicker.

Steven Bruce
interoceptive talking about the apes I do I do remember there's a very well-known osteopath who deals primarily with shoulders and he once showed in a course I was on an illustration of the way that the scapular has evolved as humans have evolved from apes. And so, the whole angle of the shoulder has changed. Because of the lack of overhead movement that we need.

Dan Rossouw
Yeah, so the great apes have got a much smaller scapular and it's much more ventually placed doors replaced sorry. And, and higher, with the glenoid facing more in an open direction, so they can much more easily just elevate their arm and hang from it. So, it aids brain creation a lot of their, their biceps tendons are different than that sometimes don't have a long head of biceps going through the joint at attaches onto the humerus.

Steven Bruce

I don't I don't know what the background to this question is. But Nick has asked whether there's much integration with other surgeons or other therapists regarding related areas of the body prior to surgery

Dan Rossouw
related to other areas of the body prior to surgery.

Steven Bruce
I don't know whether he's thinking about the connection of the shoulder with the neck or the elbow or, you know, general function of the body.

Dan Rossouw
Yeah, I'm not sure that that and maybe we did

Steven Bruce
I mean, Nick and Nick, if you want to send us a bit more information, then we can delve into that a little bit further. WSP says as a source of symptoms, which gives more pain or impeded mobility, muscular tendon damage or libral damage. In other words, how significant as the labor was a source of symptoms that needs correction.

Dan Rossouw
So yeah, it is pretty, pretty important. We it is a nerve rich structure. And if it's ruptured, they are the symptoms are mechanical, usually associated with clunking and they can be quite severe. I suspect that if you weren't your question says which is more severe, I would suspect the label injuries are probably the ones that I see more commonly that don't improve Whereas musculotendinous injuries can heal themselves pretty well. So, if you get an intra substance tear of the biceps or a tear at the musculotendinous Junction, they within three months, they'll probably go away. And they are the therapies have an important role to play. The cut the label tears that we get the slap lesions and anti re label injuries, they tend not to resolve themselves. And they tend to be the ones that continue to cause pain and continue to cause pain and continue to cause pain. And the problem is, it's not often a very physical disability. And it's often a very moderate to mild discomfort, which you can avoid by not using your arm. And so, they tend to take a long time to get sorted out. They're the ones you know, during lockdown, which would get put to the back of the queue,

Steven Bruce
Then we've got less than less than 10 minutes left, I wonder if we could perhaps move on to the distal biceps a little bit unusual interest to people.

Dan Rossouw
So, there is a slide which shows, 15, I think is quite a useful one. That's the one wishes, yeah, damage might look like. But it also tells a little bit about the anatomy. So, the distal biceps insert into the radial to the radial tuberosity. So, it has two effects that the biceps has an effect of flexion. And also, supination. Because it

winds itself up around the around the radius when the radius is pronated. And then as it contracted supinate the arm by twisting the radius. So those are two important things that until power screwdrivers were invented, that was one of the sinequan indications for repairing a distal biceps was the fact that if you had a carpenter, who had to put screws in with his hand, his right hand, he didn't need a distal biceps and it would be a very strong reason to repair his biceps for giving back is supination power. So that doesn't exist anymore, because now we will get these battery-operated screwdrivers and they work for us. But the tendon distally usually ruptures at its attachment to the bone so that the actual tendon remains intact. It's not a tendon rupture, it's a failure of the bone tendon interface. So, it's a periosteal evolution with the rupture of the Sharpie fibers which are in the bone. And it's quite nice that it does that because you can see it's like a sort of plug in of the of the tendon, you can see exactly where it's going to go back on and it shows you very nicely where to put it. The rotator cuff tendons sometimes don't fail like this, they fail by the whole thing, the whole tendon itself, becoming attenuated, cracking up becoming Five little fibers into independently which then alter, so it's a mess when they rupture. But the distal biceps comes up really nicely. And the reliable test is the thing in the middle, which is the O'Driscoll hook test. And it's really nice to do. And please everybody do it on yourself. While we're sitting there, you bend your elbow to 90 degrees, and they take the index finger of your opposite hand, and you'll feel there's a rope in your digging deep, dig really deep into your elbow, there's a rope. And you can hang a coat hanger on that rope. If you add a coat hanger, you could hang on recommended. Yep, that that rope that you feeling is the biceps tendon that if you can't feel it, do it with modified resistance to flexion. So, ask the patient to resist against flexion and then try it again because might just be hiding away in a bit of fatty tissue. Not that I'm saying anything yet. But and if you still can't feel it, that is a very, very, very reliable test that the distal biceps has ruptured. It's more accurate than an ultrasound in an MRI. In my exact reverse Popeye sign is that reliably the reverse Popeye depends how soon you get it. In the acute stage. It's pretty reliable. And the obviously the muscle belly jumps up and rolling going down. But it disappears fairly quickly. fairly quickly. I mean by within a month or so. So sometimes, if you get a delayed presentation, you might not have as much of a reverse Popeye as you would have with a long head of biceps rupture. And I'm not sure why. But it's not as reliable. It's there in the acute phase.

Steven Bruce
I don't know if we can bring it up but the next slide was about distal biceps rupture and it was an MRI with fams protocol. I've not heard of famis protocol Before

Dan Rossouw
the fact there was a picture of it on the previous slide on the left that where you, you go into flexion. At 90 degrees abduction, you have to fully supinate the arm, that's the F, and I'm not sure what the B's for. But it's one of those flexion, abduction supernode something, because it's a position, but you're lying with the arm and the head and you supinate and then you do the MRI of the elbow in that position. Yeah. So that clearly puts the, the biceps under some tension. Okay. And with it supinated it should give you a straight line from the radius right down the arm, and it gives you a very straight line running down on the MRI scan, which shows you the biceps is intact or not intact. And I think the picture showed it quite well.

Steven Bruce
Yeah, I'm not sure we can bring that up. But the picture will go out in the handout, which we'll make available after the show. I wonder if the being that sorry. I wonder if the being that just as part of abduction?

Dan Rossouw
Yeah, maybe it wasn't a be an abduction. Yeah. It's important to do that. Because if you just ask for an MRI of an elbow, normally, you get these axial images, which don't mean very much. And but that gives you a longitudinal picture of the actual tendon as it goes on to the radius and you can really see it well. So, there's but even so MRIs and ultrasounds and they're just the biceps can lie. The there is a very thick, tough sheath around the around the tendon going down onto the tendon through the forearm. And that sheath can resemble attendant, especially if it's filled up with blood. So, you know, Popeye son is better.

Steven Bruce
I don't know why I've got Claire short showing on my screen because she shouldn't be there. But hopefully somebody will get rid of her in a second. I don't mean that in a literal sense. We're talking about MRI is a second ago, and I've had a question from Rob Shanks, who is one of the osteopathic MRI experts. It's nothing to do with what we were talking about with the distal biceps. But so, Rob, has a business called go to imaging. And he's a fount of all knowledge on interpreting MRIs. But in this case, he's asked about what about attaching the long head to Supra and subscapularis. He's heard about being done before.

Dan Rossouw
Yes, absolutely. As a form of TDCS. So, you can take your, your, you've got choices and lots of muscles, I'm just using the shorter biceps now as my go to muscle. And all you want is to anchor it somewhere. And for it to help with the suppression that so I'm, I'm just thinking now that he said that the benefit of this technique that he's described would be that it would then also be a suppressor of the humeral head if you've got a weight in your arm, or you're doing for flexion. So not a bad thought. But there's no harm done in that the trouble with superspinatus is, you don't want to put any bulk into the, into the subacromial Bursa, which you would do if you did the superspinatus detachment. Going back to my point about the weird positions the arm goes into when it's not in the anatomical position. And we mustn't fall into the trap of thinking about function in the anatomical position. You've got to think about what happens when you put your hand behind your back or scratch your head. You know, doing that will completely change all those relations that we normally think of. And so, you've got to be a little careful about where you put things but subscribe. I can't see any reason why not to do that. Maybe substep minor. Yeah.

Steven Bruce
Yeah. I don't have time to ask all the questions which are which have come through, but if I can put one very quick one to you. Well, a quick answer is more Anka says you seem to ladies with acute spontaneous explosion, exclamation mark or supraspinatus calcification, is there a conservative management option for that rather than surgical?

Dan Rossouw
Well, calcific tendinitis and supersprint itis is a very variable and it can be salute agony. So much so that you you're giving people peppered in or it can be a moderately mild condition. Now I'm anticipating what she's saying is that it's the acute really bad one. They emergency wise steroid injection with local anesthetic into there will provide relief for four to six hours and maybe a little bit longer if the steroid works because the generator of pain in that situation is inflammation. That calcific material when it forms acutely is incredibly inflammation, inflammatory genic it's almost as good a word as October's. So, the steroid will help with that. And then that might be enough to get them through until the body starts sealing often fibrosing around the calcific material and stop generating the inflammatory reaction but often times within a People are not sleeping at all using vast quantities of painkillers and you do an operation on them. And before they're actually out of the recovery area, they're sad. Oh, God, thank god my shoulder feels better. You just decompress. It's like draining an abscess. It is a calcific abscess in the tendon, and drain the abs. As the pressure goes out of it, the inflammation goes and they feel better almost immediately. The other group is the group that tolerates it. It gets sealed off that lives in the tendon and can be completely asymptomatic. So, gotta be a little careful when you see calcium in attendance, and shoulder pain, they may not be the cause and effect.

Steven Bruce
Okay, done. It's been a great pleasure talking to you. Thank you. I'm very grateful for your giving up your time. We have now run out of time. So, I shall let you get back to your no doubt busy life doing shoulder surgery and, and to jack Russell. Talk to you again sometime soon. Yes,

Dan Rossouw
I'd love that. Thank you very much.

Steven Bruce
Thank you. Our pleasure.